

Patent Abstracts of Japan

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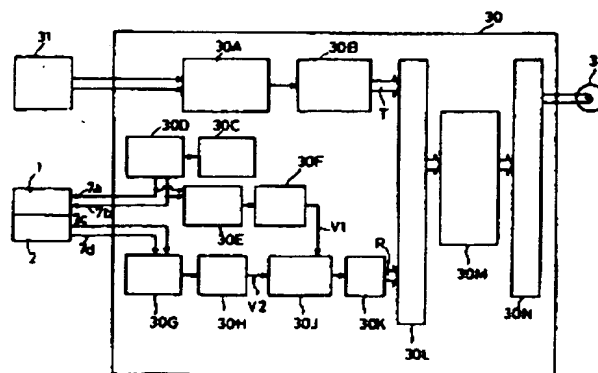
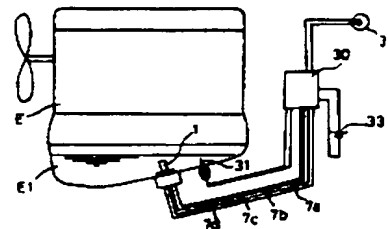
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APPLICATION NUMBER : 58003238

APPLICANT : NIPPON SOKEN INC;

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TITLE : MEASURING DEVICE OF
CHARACTERISTIC OF FLUID



ABSTRACT : PURPOSE: To attain a fluid characteristic measuring device which is compact and has a long life, by providing a displacement measuring piezoelectric body, which measures the displacement of a piezoelectric oscillator immersed into a fluid, together with the piezoelectric oscillator as one body.

CONSTITUTION: A piezoelectric oscillator 1 is set in the bottom part of an oil pan E_1 of an engine E and is immersed into oil. A function generator 30C not only gives an excitation signal to the oscillator 1 through an amplifier 30D but also inputs a DC signal V_1 proportional to the amplitude to an operator 30J through a differential amplifier 30E and a rectifying and smoothing circuit 30F. Meanwhile, the output voltage, which is proportional to the oscillation amplitude of the oscillator 1, of a displacement measuring piezoelectric body 2 which is vibrated together with the oscillator 1 as one body is converted to a DC signal V_2 through a differential amplifier 30G and a rectifying and smoothing circuit 30H and is inputted to the operator 30J. The operator 30J attains a ratio of V_1 to V_2 , and this ratio is outputted to a main operating circuit 30M through an AD converter 30K to detect the deterioration of oil together with the output signal from a temperature sensor 31; and if the viscosity of oil exceeds a limit viscosity, a warning indicator lamp 32 is lit.

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